# W5YI REPORT

Up to the minute news from the worlds of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable. May be reproduced providing credit is given to The W5YI Report.

## Dits & Bits

Fred Maia, W5YI, Editor, P.O. Box 10101, Dallas, TX 75207


★*In This Issue*★


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New emerging technology
HBO Scrambles, Skies Go Dark!
New in Consumer Electronics
"73 magazine" Changeover Update
and much, much more!



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## Amateur Digital Message Networks Permitted

The FCC has changed the amateur rules to permit automatic control for digital communications on amateur frequencies 50 MHz and above. While it sets the stage for widespread use of automatic amateur packet radio message networks, it doesn't go as far as some commenters wanted - that is include transmitting unattended traffic for non-amateurs.

Automatic control is defined as "the use of devices and procedures for control without the control operator being present at the control point when the station is transmitting." A repeater station is an example of a station operating under automatic control. The rules require a repeater control operator to be present at the control point monitoring and supervising the transmissions when third party traffic is being transmitted on his system.

The automatic control proceeding had its beginning when the ARRL filed a petition requesting automatic control for stations transmitting digital communications while operating on frequencies above 30 MHz. The FCC expanded the request by issuing a Notice of Proposed Rulemaking on April 5, 1985, to encompass all amateur operations, not just digital communications. The Commission backed off, however, when user comments showed no interest in having the measure include other than digital activities. The FCC selected a 50 MHz VHF level, rather than the 30 MHz level that the League asked for, because there are no amateur bands between 30 and 50 MHz.

Many of the commenters asked that high speed digital modes (such as packet-switching, bulletin boards, computer based message systems and electronic mailboxes) be exempt from the requirement that a control operator supervise third-party traffic. Third-party traffic is radio communications on behalf of anyone other than the control operator. They believed that the third-party rules as applied to such high speed digital communications are impracticable and would, in effect, nullify the advantages of automatic control.

"To acquiese in that request would be inconsistent with other types of amateur operation. Neither the speed at which the message is transmitted nor the emission mode (voice, telegraphy, digital, etc.) changes its character," the FCC warned.

Some commenters wanted the third party rules to be redefined and be applicable only at the time messages are introduced into an amateur communications system. The FCC responded that "...screening the message content at its introduction does not change the character of the traffic. It is still third-party traffic which must be closely regulated in the non-common carrier Amateur service.


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Otherwise, amateur facilities and frequencies would be open to non-amateurs and could eclipse other amateur uses."

The Commission also said they were very concerned about the final destination of the message - particularly in view of planned (PACSAT) orbiting amateur mailboxes. "We do not want to give our approval to a mechanism which could be used to circumvent the International Radio Regulations which forbid exchange of amateur third-party traffic between countries who are not parties to agreements permitting such traffic." International third-party radio communications are prohibited by the WARC-79 agreements "except where arrangements have been made between the two countries involved"

The FCC denied requests that all amateur frequencies be made available for automatic control or at least to the 29.5 MHz level for "coast-to-coast coverage for point-to-point message handling" because it would add additional congestion to the already crowded MF and HF ham bands.

Effective March 14, 1986, §Part 97.69 is being revised to permit automatic control of digital communications on amateur frequencies 50 MHz and above. The Commission action specifically makes unattended packet digipeaters and store/forward technology legal in the Amateur service. (Although there are those that maintain that this has always been legal - depending on how the rules are interpreted.)

A new §Part 97.80 is being added to the rules to insure complicity with the control operator requirement and to provide a mechanism whereby an automatic station may be closed down if it operates improperly or causes harmful interference to other stations. **Order by FCC, 1/13/86, PR Docket 85-105.**

## HAM'S COMMERCIAL LICENSE SUSPENDED...

The FCC has suspended the General Radiotelephone (Commercial) License of **Robert J. King, WB8WKA**, of Redford, Michigan, for a term of 14 days. King's amateur license is already the subject of an enforcement proceeding due to his alleged "willful and malicious interference" to operations of a local Detroit amateur repeater.

The FCC said that King apparently transmitted identified tones and unmodulated carriers on March 31, 1985, to interfere with the 146.04/.64 WB8CTY/R repeater frequency. This interference constituted broadcasting.

Even though King's General Radiotelephone license authorized commercial operations, the FCC said that the Communications Act "authorizes the Commission to deprive a licensee of operating authority for violations of any of the Commission's Rules, even those governing a different radio service."

## "PRIVATIZATION"- REMEMBER THAT WORD

Reduced government agency budgets with a balanced budget by 1991 is now the law! The Gramm-Rudman legislation will have a big impact on how the FCC (and all other federal agencies) do things! Remember we told you in (September) 1980 that the FCC would be getting getting out of the amateur testing business. The signs were plainly all there! Well, it happened.

Now the signs are all there that the FCC will be getting out of the licensing business as well! Despite the Reagan administrations vow to increase military spending, the newly adopted Deficit Reduction Act requires that, according to a nailed-down timetable, government deficit spending be gradually decreased to zero by 1991. That means less... progressively less funds for Fiscal'87, '88, '89, '90 and '91. Coupling that with certain inflation, you can look for many services to simply disappear. Ham licensing certainly isn't one of the most important functions of the FCC.

How will they pull it off? By "privatization" ...having the private sector assume activities now done by the various government agencies. From where we sit, amateur volunteer examinations was only the start. Contrary to what we have been led to believe, for a fee all amateur licensing (not just "special call signs") could be handled by the private sector within a couple of years. Remember we told you so.

DO YOU EXCERPT OR QUOTE FROM "THE W5YI REPORT?" WOULD YOU DO US A FAVOR?

interest in nor am an employee of any company or entity engaged in making, preparing or distributing amateur radio equipment or license preparation materials. My age is at least 18 years old.

cate (optional) is also available for $1.00. Details and accredi-
ation materials will be sent to you within a two week period.



## FCC ISSUES NEW HAM BAND, MODE LIST....

As part of the Order implementing new amateur microwave bands and completing all of the WARC-79 changes, the FCC revised and issued a new §Part 97.7 detailing the final frequency privileges for all classes of amateur radio operator licenses. Also revised was a new §Part 97.61 covering authorized emissions in the different ham bands and §Part 97.415 detailing amateur frequencies available for amateur Space, Earth and Telecommand operation.

We are printing an **extremely capsulized** version here. Be aware that we had to boil down thirteen single-spaced typewritten pages to less than two pages. Most of the pages had to do with special limitations and restrictions that exist when operating in the various bands or modes. We have lumped many of somewhat similar limitations together. We did not list the many other services that share spectrum with the Amateur Radio Service... or which are primary, secondary or co-secondary.

**§Part 97.415 - Frequencies available for Space, Earth and Telecommand operation:**

7.000-7.100, 14.000-14.250, 21.000-21.450, 24.890-24.990, 28.000-29.700, 144-146, 435-438 (1), 1260-1270 (1,4), 2400-2450 (1) MHz. 3.40-3.41 (1,2), 5.65-5.67 (1,4), 5.83-5.85 (1,3), 10.45-10.50 (5), 24.00-24.05, 47.0-47.2, 75.5-81.0, 142-149 and 241-250 GHz.

Limitations: (1,4) Amateur-Satellite Service stations must not cause interference to other authorized stations, (2) Band not available in ITU Region 1, (3) Amateur-Satellite Service stations limited to Earth-to-Space transmissions.

AUTHORIZED EMISSIONS Using new WARC three character designation

**(FIRST CHARACTER - Emission Type)**

A = AM Double Sideband, F = FM, G = Phase Modulation, H = SSB, Full Carrier, J = SSB, Suppressed Carrier, N = Unmodulated Carrier, P = Pulse.

**(SECOND CHARACTER - Modulation Type)**

Ø = Unmodulated, 1 = Single Channel carrying digital information without modulated carrier, 2 = Single channel carrying digital information with modulated carrier, 3 = Single channel with analog information, 8 = Two or more channels, analog information.

**(THIRD CHARACTER - Information)**

N = No information sent, A = Morse Code for copying by ear, B = Automatically received telegraphy, C = Facsimile, E = Telephony (voice), F = Television

**(Kilohertz)**

| | |
|---|---|
| 1800 - 2000 | A1A, F1B, A3E, F3E, G3E, A3C, F3C, A3F, F3F, H3E, J3E, R3E |
| 3500 - 3750 | A1A, F1B (1) |
| 3750 - 4000 | A1A, A3E, F3E, G3E, A3C, A3F, F3C, F3F, H3E, J3E, R3E |
| 5167.5 | J3E, R3E |
| 7000 - 7075 | A1A, F1B (1) |
| 7075 - 7100 | A1A, F1B, H3E, J3E, R3E (1,2) |
| 7100 - 7150 | A1A, F1B (1) |
| 7150 - 7300 | A1A, A3E, F3E, G3E, A3C, A3F, F3C, F3F, H3E, J3E, R3E |
| 10100-10150 | A1A, F1B |
| 14000-14150 | A1A, F1B |
| 14150-14350 | A1A, A3E, F3E, A3C, F3C, A3F, F3F, H3E, J3E, R3E |
| 21000-21200 | A1A, F1B (1) |
| 21200-21450 | A1A, A3E, F3E, A3C, F3C, A3F, F3F, H3E, J3E, R3E |
| 24890-24930 | A1A, F1B |
| 24930-24990 | A1A, A3E, F3E, G3E, A3C, F3C, A3F, F3F, H3E, J3E, R3E |
| 28000-28300 | A1A, F1B (1) |
| 28300-29700 | A1A, A3E, F3E, G3E, A3C, F3C, A3F, F3F, H3E, J3E, R3E |

**(Megahertz)**

| | |
|---|---|
| 50.0-50.1 | A1A |
| 50.1-51.0 | A1A, A2A, A2B, A3E, A3C, A3F, F1B, F2B, F3E, G3E, F3C, F3F, H3E, J3E, R3E |
| 51.0-54.0 | NON, A1A, A2A, A2B, A3E, A3C, A3F, F1B, F2B, F3E, G3E, F3C, F3F, H3E, J3E, R3E |
| 144.0-144.1 | A1A |
| Above 144 | NON, A1A, A2A, A2B, A3E, A3C, A3F, F1B, F2B, F3E, G3E, F3C, F3F, H3E, J3E, R3E |

PØN emissions may be used above 2300 MHz except in the 10.0-10.5 GHz band. In the 902-928 Band F8E emissions may also be used.

Limitations:

(1.) Novice & Technician operators may not use F1B emissions.

(2.) Amateurs in Regions 1, 3, Alaska & Hawaii may also use A3E, F3E & G3E emissions

| Meter Band | Terrestrial Location of Amateur Station ITU Reg. 1 | ITU Reg. 2 | ITU Reg. 3 | Limit. |
|---|---|---|---|---|
| **NOVICE CLASS** | | | | |
| 80 | 3700-3750 | 3700-3750 | 3700-3750 | 1,3,32 |
| — | -------- | 5167.5 | -------- | 2 |
| 40 | 7050-7075 | 7100-7150 | 7050-7075 | 1,2,32 |
| 15 | 21100-21200 | 21100-21200 | 21100-21200 | 1,32 |
| 10 | 28100-28200 | 28100-28200 | 28100-28200 | 1 |
| **TECHNICIAN CLASS** | | | | |
| 80 | 3700-3750 | 3700-3750 | 3700-3750 | 1,3,32 |
| — | -------- | 5167.5 | -------- | 2 |
| 40 | 7050-7075 | 7100-7175 | 7050-7075 | 1,3,32 |
| 15 | 21100-21200 | 21100-21200 | 21100-21200 | 1,32 |
| 10 | 28100-28200 | 28100-28200 | 28100-28200 | 1 |
| **GENERAL CLASS** | | | | |
| 160 | 1810-1850 | 1800-2000 | 1800-2000 | 3,5,21 |
| 80 | 3525-3750 | 3525-3750 | 3525-3750 | 3,32 |
| 75 | -------- | 3850-4000 | 3850-3900 | 3,32 |
| — | -------- | 5167.5 | -------- | 2 |
| 40 | 7025-7100 | 7025-7150 | 7025-7100 | 3,32 |
| 40 | -------- | 7225-7300 | -------- | 3,32 |
| 30 | 10100-10150 | 10100-10150 | 10100-10150 | 28,32 |
| 20 | 14025-14150 | 14025-14150 | 14025-14150 | 32 |
| 20 | 14225-14350 | 14225-14350 | 14225-14350 | 32 |
| 15 | 21025-21200 | 21025-21200 | 21025-21200 | 32 |
| 15 | 21300-21450 | 21300-21450 | 21300-21450 | 32 |
| 12 | 24890-24990 | 24890-24990 | 24890-24990 | 29,32 |
| 10 | 28000-29700 | 28000-29700 | 28000-29700 | |
| **ADVANCED CLASS** | | | | |
| 160 | 1810-1850 | 1800-2000 | 1800-2000 | 3,5,21 |
| 80 | 3525-3750 | 3525-3750 | 3525-3750 | 3,32 |
| 75 | 3775-3800 | 3775-4000 | 3775-3900 | 3,32 |
| — | -------- | 5167.5 | -------- | 2 |
| 40 | 7025-7100 | 7025-7300 | 7025-7100 | 3,32 |
| 30 | 10100-10150 | 10100-10150 | 10100-10150 | 28,32 |
| 20 | 14025-14150 | 14025-14150 | 14025-14150 | 32 |
| 20 | 14175-14350 | 14175-14350 | 14175-14350 | 32 |
| 15 | 21025-21200 | 21025-21200 | 21025-21200 | 32 |
| 15 | 21225-21450 | 21225-21450 | 21225-21450 | 32 |
| 12 | 24890-24990 | 24890-24990 | 24890-24990 | 29,32 |
| 10 | 28000-29700 | 28000-29700 | 28000-29700 | |
| **AMATEUR EXTRA CLASS** | | | | |
| 160 | 1810-1850 | 1800-2000 | 1800-2000 | 3,5,21 |
| 80/75 | 3500-3800 | 3500-4000 | 3500-3900 | 3,32 |
| — | -------- | 5167.5 | -------- | 2 |
| 40 | 7000-7100 | 7000-7300 | 7000-7100 | 3,32 |
| 30 | 10100-10150 | 10100-10150 | 10100-10150 | 28,32 |
| 20 | 14000-14350 | 14000-14350 | 14000-14350 | 32 |
| 15 | 21000-21450 | 21000-21450 | 21000-21450 | 32 |
| 12 | 24890-24990 | 24890-24990 | 24890-24990 | 29,32 |
| 10 | 28000-29700 | 28000-19700 | 28000-29700 | |

| Meter Band | Terrestrial Location of Station ITU Reg. 1 | ITU Reg. 2 | ITU Reg. 3 |
|---|---|---|---|
| **TECH/GENERAL/ADVANCED/EXTRA CLASS** | | | |
| | | (Megahertz) | |
| 6 | ------ | 50-54 | 50-54 |
| | | (Limitation: 3) | |
| 2 | 144-146 | 144-148 | 144-148 |
| | | (Limitation: 3,32) | |
| 1.25 | ------ | 220-25 | ------ |
| | | (Limitation: 3,4,5) | |
| .70 | 430-450 | 420-450 | 420-450 |
| | | (Limitation: 3,5,6,7,10,30) | |
| .35 | ------ | 902-928 | ------ |
| | | (Limitation: 3,5,8,9 | |
| .23 | 1240-1300 | 1240-1300 | 1240-1300 |
| | | (Limitation: 5,11,22) | |
| --- | 2300-2310 | 2300-2310 | 2300-2310 |
| | | (Limitation: 3,5,12,13) | |
| --- | 2390-2450 | 2390-2450 | 2390-2450 |
| | | (Limitation: 3,5,13,14) | |
| | | (Gigahertz) | |
| --- | --------- | 3.3-3.5 | 3.3-3.5 |
| | | (Limitation: 3,5,15,16,17) | |
| --- | 5.650-5.850 | 5.650-5.925 | 5.650-5.850 |
| | | (Limitation: 3,5,18,19,20) | |
| --- | 10.0-10.5 | 10.0-10.5 | 10.0-10.5 |
| | | (Limitation: 5,21,22,23,31) | |
| --- | 24.00-24.25 | 24.00-24.25 | 24.00-24.25 |
| | | (Limitation: 3,5,22,23,31) | |
| --- | 47.0-47.2 | 47.0-47.2 | 47.0-47.2 |
| --- | 75.5-81 | 75.5-81 | 75.5-81 |
| -- | 119.98-120.02 | 119.98-120.02 | 119.98-120.02 |
| | | (Limitation: 15,25) | |
| --- | 142-149 | 142-149 | 142-149 |
| | | (Limitation: 5,15,21,22) | |
| --- | 241-250 | 241-250 | 241-250 |
| | | (Limitation: 5,21,22,27) | |
| -- | Above 300 | Above 300 | Above 300 |
| | | (Limitation: 15) | |

**Limitations:** (1) Code only (2) Available for emergency Alaskan Communications (3,4,5,7,-10,11,13,15,16,18,19,21,22,23,25,28,29,30) Do not cause harmful interference to authorized stations (6) No station shall operate north of Line "A" in the 420-450 MHz band (8) Colorado/Wyoming excluded (9) Certain parts of Texas/New Mexico excluded (12) Fixed Service must not cause interference to amateur stations (13,14,20,21,22,26,27) Amateur stations not protected from inteference (32) amateur stations may be used for communications in connection with natural disasters.


THE ANSWERS TO ALL FCC TESTS ARE AVAILABLE! FCC-Novice Study Guide $3.00 + $1.00 postage
The W5YI Report, even though a VEC in all regions FCC-Novice Element 2 Test $1.00 + 50¢ postage
has been given permission by the FCC to distribute FCC-Tech/Gen. Study Guide $5.00 + $1.50 postage



W5YI
P.O. Bo
Dallas, T

## AMATEUR RADIO CALL SIGNS...

issued through the first of January 1986 are as follows:

| Radio District | Group "A" Extra | "B" Advan. | "C" Tech/Gen | "D" Novice |
|---|---|---|---|---|
| 0 | NOØY | KEØCM | NØGSY | KAØVVL |
| 1 | NC1T | KB1VR | N1DWX | KA1NUT |
| 2 | NO2B | KD2QM | N2FZV | KA2ZTF |
| 3 | KY3T | KC3VC | N3ERU | KA3OYO |
| 4 | AA4PO | KJ4OT | N4NHN | KB4REP |
| 5 | WF5B | KF5IC | N5ISY | KA5YRH |
| 6 | WO6G | KI6AV | N6MXV | KB6LHF |
| 7 | NS7C | KE7MC | N7HTN | KA7WSM |
| 8 | NQ8K | KE8CN | N8HCI | KA8YOQ |
| 9 | NI9R | KD9TE | N9FOI | KA9UPG |
| N. Mariana I | AHØE | AHØAC | KHØAI | WHØAAG |
| Guam | AH2W | AH2BE | KH2BW | WH2AHZ |
| Johnston Is. | AH3A | AH3AC | KH3AB | WH3AAC |
| Midway Is. | | AH4AA | KH4AD | WH4AAF |
| Hawaii | ** | AH6GR | NH6FB | WH6BGO |
| Kure Is. | | | KH7AA | |
| Amer. Samoa | AH8B | AH8AB | KH8AD | WH8AAV |
| Wake Wilkes Peale | | AH9AC | KH9AB | WH9AAE |
| Alaska | ** | AL7HN | NL7GY | WL7BIX |
| Virgin Is. | KP2O | KP2AV | NP2BO | WP2AEP |
| Puerto Rico | WP4P | KP4JN | NP4SQ | WP4EWS |

[** Note: All of the available Extra Class call signs have been issued in Hawaii and Alaska. Group "B" call signs now being assigned to Extra Class amateurs.]

## FCC TAKING LONGER TO ISSUE LICENSES...

The length of time that it takes Amateur radio operator licenses to be issued continues to increase. It is taking a week longer than last month. Allow a minimum of two months before contacting your VEC or the FCC about a delinquent license. We also find that in the majority of cases, errors on the FCC Form 610 are the major reason for excessive processing times.

Allow 3 to 4 months for the paperwork to catch up if you have upgraded twice. Both the ARRL and W5YI-VEC programs write the applicant to submit a previous upgrade license when received before forwarding the most recent upgrade application. The application then goes in a "hold file." We handle all applications within 24 hours of receipt!

It is not at all unusual for us to hold a new upgrade application two months before the applicant sends us a previous upgrade license so that we can attach it to the new application. If there is an error on the application, the problem is compounded. We have dozens of applications (going back to December testing) awaiting licenses to be attached to them and forwarding to Gettysburg!

And Gettysburg doesn't issue the second upgrade immediately. It must go through the "process" again - including being compared to the Washington, DC, licensee data base some 100 miles away. The data (on magnetic tape) is sent by courier to Washington. The licenses are output after courier return. It all takes time - and with more testing activity now that the amateur community is handling the program - more time. Tell your applicants to be patient. VECs and the FCC can't process your newer applications if they are bogged down checking on the previous ones that they are trying to handle as fast as they can. Fewer than one inquiry in a hundred is really the result of a problem or mishandling - the rest merely cause further delays.

Be aware that the FCC does NOT log in applications. If you contact the FCC and they tell you they "have no record" of your application, they mean it has not yet been "keystroked" - entered into the system. Since this is one of the last things they do, "no record" does not mean they don't have your 610. It merely means they do not know if they have it or not. It is prohibitively time consuming for the FCC to do a desk-by-desk search for an application. Every applicant is issued a Certificate of Successful Completion when upgrading that carries temporary upgrade operating privileges for a year.

But that doesn't mean that the FCC doesn't make errors. They do... but darn few compared to applicants, VEs... and yes, VEC's too. We have several applicants that upgraded and received the same license that they previously had. A "key stroke" error was made when the application was input into FCC terminals in Gettysburg. It is being straightened out.

## NEW ADVANCED CLASS QUESTION POOL!

The FCC has issued a new revision of PR Bulletin 1035C, the 500 question pool for Element 4A, the Advanced Class amateur radio operator examination.

While there are a few new questions, the amount of changes are minimal. Most are merely reworded versions of current questions to improve clarity. Some questions remained the same, but were renumbered.

The new questions concern repeater operation - ["What is an open repeater", and what frequencies are available for repeater operation] and DC input power to various classes of amplifiers. Deleted were questions concerning "tripole antennas."

A number of questions also had terms like AM, FM, SSB changed to A3E, F3E and J3E, etc., ...to conform to the new WARC emission identifiers. Frequency bands such as 220-225 and 420-450 MHz are now referred to at the 1.25 and .70 meter bands in certain questions.

The new Advanced question version must be put into effect by the various VECs on/before August 1, 1986. (The last revision of Element 4A was in March 1985 which had to be implemented by VEC's on/before October 1, 1985.)

By the way, the new July 1985 Novice (Element 2 - PR Bulletin 1035A) question pool must be used effective February 1, 1985. (We have several different ready to use Novice tests available at $1.00 each if you need them.)

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## DECEMBER AMATEUR LICENSING STATS....

| | December 1984 | 1985 |
|---|---|---|
| New First Time Amateurs: | 1,552 | 2,385 |
| Novice Class Upgrading: | 949 | 700 |
| Technician Class Upgrading: | 299 | 262 |
| General Class Upgrading: | 461 | 345 |
| Advanced Class Upgrading: | 190 | 192 |
| Total Amateurs Upgrading: | 1,899 | 1,499 |
| Amateurs Failing to Renew: | 343 | 1,804 |
| [Note: 1127 out of 1804 were Novices!] | | |
| Change in Amateur Census: | +1,209 | +581 |

| | December | 1985 |
|---|---|---|
| [ 9.3% Extra Class | | 38,495] |
| [23.5% | | 97,959] |
| [28.2% | | 117,107] |
| [20.1% | | 83,679] |
| [18.9% | | 78,616] |
| **Month End Amateur Census:** | 412,237 | 415,856 |
| Club/Military/RACES: | | 2,749 |
| **Total Active Stations:** | | 418,605 |

[Source: FCC Licensing Branch, Gettysburg]

## AMATEUR APPLICATIONS PROCESSED....

by FCC/Gettysburg, PA in December:

| 1983: | 1984: | 1985: | 1986: |
|---|---|---|---|
| 11,525 | 11,189 | 8,775 | 9,135 |

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## LOW ORBIT COMPUTER "FLYING MAILBOX"

The FCC's January 13th ruling makes the concept of "flying mailboxes" a legal reality. PACSAT, an acronym for packet satellite, is a joint venture between AMSAT - the **Radio Amateur Satellite Corporation** and VITA - **Volunteers in Technical Assistance.** VITA has helped emerging and under-developed nations for more than two decades. Up until this point, their assistance has mostly been through the mail. With assistance from the amateur community, they are about to go "high tech."

The mission of PACSAT is to demonstrate to Third World countries the feasibility of inxpensive satellite delivered information. Linked by satellite, amateur volunteers in developing countries will be able to send and receive emergency, welfare, and certain other amateur-type messages. Travellers in dangerous, rugged areas will easily be able to stay in touch with the outside world with small portable earth stations that can be carried about! Messages facilitating business are, of course, prohibited.

One of the officials at VITA is **Gary Garriott, WA9FMQ**, a cousin of astronaut Owen Garriott, W5LFL. As VITA control operator, Garriott must insure that all messages are of legal amateur radio content. Hopefully the amateur demonstration would show to other financers of commercial satellites what can be done in the field.

Harold Price, NK6K, a Los Angeles

SHIPPED FIRST CLASS SAME DAY! FCC-Extra Cl. Study Guide $5.00 + $1.50 postage
applicants and VE's. All materials contain all ques- FCC §Part 97 Rules Book $3.00 + $1.50 postage
tions, answers and discussion why answer is right!



communications consultant with a degree in computer science is the project manager for PACSAT. We talked to him this past weekend. While much of what he said was highly technical and theoretical, we were able to learn much about PACSAT.

Sometime next year, a spring-top cylinder will be loaded onto a NASA space shuttle. The garbage can sized container is actually what NASA calls a "get-away special" - a cheap ($20,000) ride into space. Hal was not sure just when it will be launched, since "get away specials" ride on a space available basis.

Inside the canister will be a very sophisticated amateur satellite that will use packet radio as its primary access mode. Its $1 million dollar price tag must be paid for by donations which are still being solicited. Packet radio is an error free system of computer-to-computer communications travelling nearly simultaneously in both directions on the same frequency.

PACSAT will circle the globe in a low polar orbit every 90 minutes at a 500 mile altitude. Since the earth is rotating beneath, PACSAT passes over every point on the earth four times a day and will be in sight of any amateur station for a ten minute period. PACSAT will be covered with solar cells, contain its own propulsion system, transmitters, receivers, and microprocessors (holding 4 megabytes of memory) to run its mailbox.

Using automatic store and forward technology, messages will be uplinked (at 480 characters a second) to PACSAT for subsequent automatic retrieval any place in the world. The international information exchange potential is mind boggling!

The PACSAT system is unbelieveably simple and low cost compared to existing commercial systems! Instead of three multi-million dollar geostationary satellites and large expensive antennas, PACSAT simply systematically moves around the earth inhaling, storing and exhaling traffic much like your mailman.

Very inexpensive ground equipment will fit in a briefcase! Even an ordinary coat hanger makes an exceptable receiving antenna! An amateur packet station (small portable computer, a terminal node controller and a radio) is all that is needed. The packet station will simply query PACSAT to see if any messages are waiting for it to download. Packet stations can even turn themselves on and off to coincide with known PACSAT orbits!

The disadvantage of PACSAT is "time" - it isn't instantaneous like those of expensive global systems. It can take up to 10 hours to deliver a message depending on the location of the addressee and sender.

PACSAT is not an untried system. The Amateur UoSAT OSCAR 11 presently carries a working PACSAT prototype system. Japanese amateurs hope to orbit a similar store and forward system this fall! Low orbit amateur messaging will soon be with us!

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¶ Lloyd (W5KG) & Iris (W6QL) Colvin of YASME DX fame have completed their 3D6QL operation in Swaziland with 130 countries worked and nearly 6,500 QSOs on all HF bands. QSL to: YASME, P.O. Box #2025 Castro Valley, CA 94546. They are trying to get visas to enter Mozambique, ...so far no luck.

¶ We received a phone call from Dave Sidall, K3ZJ, who accompanied Barry Goldwater, K7UGA, to Taiwan. They made about 7,000 QSO's using the BVØBG call sign issued to Goldwater. QSL's go to: W3USS; Capitol Hill Amateur Radio Society; U.S. Senate; P.O. Box 73; Washington, DC 20510.

¶ **Computer Trivia** The first automatic computer, ENIAC (for Electronic Numerical Integrator and Computer) developed in the early 1940's contained 18,000 vacuum tubes, weighed 30 tons and occupied a room 30 by 50 feet. Locating and replacing defective tubes was a problem as was cleaning out the moths that were attracted by the warmth and soft light. The term "debugging" ...for fixing computer problems has stuck ever since!

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## PETITIONER REPLIES ON PACKET PETITION

The comment period closed (on January 15th) on the Don Stoner, W6TNS, petition to create a new radio class and re-allocate six

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meter spectrum to owners of personal computers. Proposed was a new **Public Digital Radio Service** - a packet radio service for the masses on amateur spectrum. Stoner had until February 1 to reply to the negative comments. He sent in his response on January 20th.

While anticipating a significant opposition on the part of radio amateurs, "It was a pleasant surprise to find out that this was not the case." Responses from the general public - both amateur and non-amateur - were 2 to 1 in favor of the concept or some variation of it. "The ARRL response was the only comment which denied the need for this public service," he said in his reply comments.

The League said in their comments that:
(1.) ...the Amateur Radio Service already provides for communications between computers using packet radio therefore the service is unnecessary;
(2.) ...if the public wants access to the airwaves, they must earn an amateur license;
(3.) ...the public has access to a data communications network by means of an amateur license and;
(4.) ...the 52-54 MHz segment of the six meter band is adequately populated and not "underoccupied" as Stoner had maintained.

Don said that the League's position is not in the public interest, convenience and necessity. He questioned how the ARRL could comment on the remarkable growth of packet radio over the past few years and then maintain that there is no ascertained need for it.

In responding to the ARRL contention that "the Amateur Radio Service provides the infrastructure and discipline needed for the viability of personal computer communications" he said, "Where is it written that a ham license bestows discipline upon the holder? One need only listen to the 75 meter amateur band to refute this argument. A quick tour of two meters will reveal that good taste, manners and courtesy are not enclosed when one receives the envelope containing an amateur radio license." He said it is arrogant to force people to become radio amateurs in order to achieve access to the airwaves. "...Why not insist that those who fly airplanes, use cellular radio or open their garage doors also become radio amateurs?"

According to Stoner, amateur packet radio is not adequate. He says his PDRS offers significant improvements and that the growth would exceed that of amateur radio since no licensing is involved. "It is also likely that many radio amateurs would utilize the network, as indicated by the public comments. This provides a unique opportunity to introduce the public to other exciting areas of amateur radio."

He still maintains that the six meter band is underutilized. "Only 24 of the 50 states have more than one repeater and in 20 states there are no repeaters." He said that there are only nine active six meter repeaters in his own state of Washington.

Stoner also replied to the opposition of MST, **Maximum Service Telecasters** - a television industry group. They argued that his proposal would cause significant new interference to television Channel 2. He said this contention is "preposterous" and gave convincing data as to why it was erroneous.

Both the MST and ARRL comments were filed on the same day. Stoner feels that MST "joined forces with strange bedfellows to contradict themselves." MST agrees that six meters is underoccupied since signals in this region cause television interference. The ARRL says that the spectrum in question is widely used by six meter enthusiasts.

While Stoner had hoped that a way could be found to provide for computer-to-computer communications within the Amateur Radio Service, the ARRL "has driven a stake through the heart of this codeless vampire for once and for all."

He still believes that there is a need for the **Public Digital Radio Service.** If the 52-54 MHz portion of the spectrum is not suitable then where is there a suitable spot, he asks? While "communication by light beam seems the only answer," Stoner said he hopes that the Commission can identify a small segment of spectrum where the Public Digital Radio Service can be located.

**WOULD YOU LIKE TO BECOME A VOLUNTEER EXAMINER?** "I am a currently licensed Extra Class amateur radio operator and wish to be a volunteer examiner. I have never had my station or
under "The W5YI Report" Program? If so, please send a copy

# W5YI REPORT.....



February 1, 1986

¶ Whispers in Washington lean towards having another woman FCC Commissioner! Hispanic Henry Rivera's vacated seat could be filled by Patricia Diaz Dennis, another hispanic and a federal labor relations lawyer. Reportedly she has good contacts within the Reagan administration that must appoint a successor to Rivera.

¶ Apple Computer and ex-founder and former chairman, Steve Jobs, have reached an out-of-court settlement in Apple's suit to prevent Job's from marketing a competing new computer until 1987. Under the terms, Apple can inspect Job's hardware and he is prevented from further spiriting away more Apple employees for at least six months.

¶ While on the subject of Apple Computer, there is an interesting article in the January 27th issue of Information Processing magazine that details how Apple president John Scully is transforming the firm from an entrepreneural to a "cool, disciplined, orderly and driven" company. Among the mechanisms to be employed... cost cutting and new management techniques. Hired by Jobs, Scully convinced the Board of Directors to remove him. "I wasn't hired to be his friend." 65% of Apple's revenues (and most of its profits) still come from the antiquated Apple II.

¶ Have you seen the mail order computer ads by Joseph Sugarman of JS&A - Products that Think? Did you know that he was a ham - W9IQO? Joe is a very strong copy writer!

¶ The FAA and the FCC are having a "tiff." Both federal agencies are developing regulations aimed at reducing interference to aeronautical communications. Both agencies apparently feel that they have jurisdiction and fear that their eventual rulemaking could end up different and conflicting! Aviation frequencies are sandwiched in between the FM broadcast and the amateur 2-meter ham band.

¶ After a 4 year, $15 million effort, HBO and Cinemax began scrambling of its satellite signal on January 15th. Many home earth station owners thought it wouldn't happen. It was like the grim reality of an execution. HBO now costs $12.95 monthly, $19.95 for both services. Few descramblers are available.

¶ SPACE, the home dish satellite industry organization, said that none of their 3,000 affilliated dealers had any of the needed M/A Video-Cipher decoders and they were concerned about sales of future home satellite receivers. The M/A Com encyption system is emerging as the standard. Showtime/The Movie Channel is also set to scramble nationwide between January 27 and early February.

¶ But all the news was not bad for SPACE. On January 14th, the FCC gave a boost to home satellite sales by pre-empting much of local governments' zoning authority over receiving dishes in much the same way that they did to amateur antennas and their supporting structures. (PRB-1) States, counties and cities can regulate dishes only if there is a clear health, safety or aesthetic objective. SPACE had argued that in the past, local governments had been influenced by cable and broadcast interests.

¶ And PRB-1 played a big part in a decision by the 6th Circuit US Court of Appeals. They remanded the antenna case of John A. Thernes, WM4T, of Lakeside Park, Kentucky, back to a lower district (federal) court for reconsideration in light of the FCC's declaration that amateur antennas fall in the federal domain. (See 12/1 W5YI Report, page 8)

¶ Look for 1986 to be the year of built-in Stereo TV. That's a conclusion made by attendees of the recent Winter CES (Consumer Electronic Show) recently held in Las Vegas! (3.5 million stereo televisions could be sold this year alone.) Other 1986 consumer biggies: home dish set-ups, VCR's (VHS format - forget Beta) and LCD (liquid crystal display) miniature televisions. Panasonic had a pocket watch TV for $300. Using LCD flat screen technology, Casio showed a $\frac{1}{4}$" thick pocket calculator-size television and one inch thick 6" and 12" screen prototype units!

¶ Passenger cabins in cruise liners now have television beamed directly to them from satellites! The Shipboard Satellite Network charges according to the number of passengers on board! Advertisements will be tailored to cruise line business. The Queen Elizabeth II is the first to get the new service which is being expanded to other vessels..

WOULD YOU DO US A FAVOR? many computer bulletin boards and ham club newsletters. We do not get any income from this ad (see margin between pages 4 & 7) on license preparation materials. Thanks! and would appreciate it if you would publish our small classified

¶ For ten bucks, armchair quarterbacks in Roseville, California, were able to call plays in this year's Super Bowl by punching in plays on their interactive cable remote control unit. Players score when their play matches that actually called in the game! Concept is licensed by the NFL.

¶ A firm in Ft. Lauderdale, Florida, has designed a remote or on-line telephone system specifically for use by cable companies on lines going to their customers! It allows cable companies to get into the telephone business for $3995 and allows their customers pay less than local telcos charge.

¶ A French "electronics singles bar" has cropped up in Paris. Users can dial a telephone number and (apparently legally) leave sexually-oriented messages for others anonymously on the state operated Minitel videotex network! Many companies are banning the popular Minitel number from their system!

INSIDE STUFF ON W2NSD/1 & 73 MAGAZINE

As discussed in our January 1st issue, 73 Magazine is now back in the Wayne Green stable. I have been trying to reach him (without success) to find out his plans for the magazine. The April issue (featuring antennas) will be the first "73" that will be under his leadership even though he has been at the helm since January 1. We understand that there will be a considerable number of physical changes to the magazine - such as type font, size, etc.

The current (February) issue of 73 has the publisher's column by Jim Gray, W1XU. Gray has now left 73 and is with another magazine of CQ publisher Dick Ross, K2MGA.

73 has a new top editor, but I have been unable (at this writing) to get his name. I do know that he used to be an assistant editor with 73 when Wayne had it before. The previous entire top 73 staff has left for greener (non-Green?) pastures. Some resigned - others accepted positions with other publications put out by the parent company who were very fair in handling the 73 resignations and reassignments when it changed divisions. It will be interesting to see how the masthead looks when it emerges. I'm told that we won't recognize anyone except Green himself.

The amateur community will be seeing a lot of Wayne Green, W2NSD/1. He is already booked into a number of hamfests - including Dayton where he will be a speaker.

By the way, a little Wayne Green Trivia... Licensed first in 1940, Green got into the publishing business by first publishing a mimeographed RTTY newsletter (circulation 450) called Amateur Radio Frontiers in the early 1950's. He later became a CQ columnist on RTTY. Five years later (1960) he started 73 Magazine - a one man operation. Thinking that small computers might catch on, he started Byte Magazine in 1975 just as personal computing was coming on the scene! It remains the biggest and most popular micro-mag to this day!

Green lost Byte Magazine in a marital settlement, but went on to found a dozen other microcomputer related magazines and companies. He merged his company with the CW/Framingham publishing group in 1983 who gave him a generous transfusion of cash. Contrary to what you may have heard, Green did not sell his company for $60 million. He merely became a part (subsidiary) of CW/Framingham, the world's largest (by far) and most successful publisher of computer publications.

Wayne told us himself that he would not get to keep the money (reported at $20 million) that CW gave him as operating capital. He merely had the use of it. Even though his company (WGE, Inc., Wayne Green Enterprises) operates independently of the CW corporate umbrella, it is very much a part of it. They provided the vehicle for him to be an intrapreneur rather than an entrepreneur.

WGE publishes Tele (covering the telephone industry), Digital Audio and Pico (laptop computers.) Digital Audio is doing incredibly well. Like Byte's micros (and Miller's less calories) Green has capitalized on being the first out of the gate with something new (and from a marketing standpoint) explosive. No so with Tele (which has recently suspended publication) and Pico which has gotten off to a slow start.